CORRIGENDA

Attached are corrections to INPUT's INFORMATION SERVICES ANNUAL PRESENTATION. Please replace the pages listed below with the corrected pages.

PAGE NUMBER	PAGE TITLE
4	CONTENTS
77	CHANGES FROM 1984 PROCESSING SERVICES
78a	CHANGES FROM 1984 PROCESSING SERVICES
78	CHANGES FROM 1984 PROCESSING SERVICES
87	EDI/EII
117	CHANGES FROM 1984 SOFTWARE PRODUCTS
118	CHANGES FROM 1984 SOFTWARE PRODUCTS
123	APPLICATION DEVELOPMENT TOOLS PENETRATION ANALYSIS (please delete this page)
124	APPLICATION DEVELOPMENT TOOLS PENETRATION ANALYSIS (please delete this page)

THANK YOU

This presentation is correct. It contains the correct pages
5/29/86 SVB

AGENDA

Information Services Industry—Slow-Down or Speed-Up

What segments of the industry are affected by the computer industry "slump" and why?
What will happen over the next five years?

Annual Presentation by Peter A. Cunningham
President, INPUT

1. **INTRODUCTION**
   - Research Base
   - Forecast Parameters
2. **STATE OF THE INDUSTRY**
   - 1984 Status
   - What Has Happened This Year
   - Overall Forecasts Through 1990
3. **ENVIRONMENTAL CONSIDERATIONS**
   - Industry Slowdown
   - Buying Process Changes
   - Information Systems Trends
4. **MARKET FORECASTS**
   - Forecasts By Type Of Service
   - Key Factors In Each Market
   - Performance Of Leading Companies
5. **CONCLUSION**
   - INPUT Recommendations
   - 1986 INPUT Program
6. **DISCUSSION**
   - Questions And Answers

The length of the presentation can be varied from one to two-and-one-half hours with a maximum of half an hour for discussion. A 10-minute break is recommended for presentations longer than one hour.

A hard-copy of the visual material used will be available before the presentation.

INPUT®

INFORMATION SERVICES INDUSTRY

Peter A. Cunningham
President
INPUT

SLOW-DOWN OR SPEED-UP?

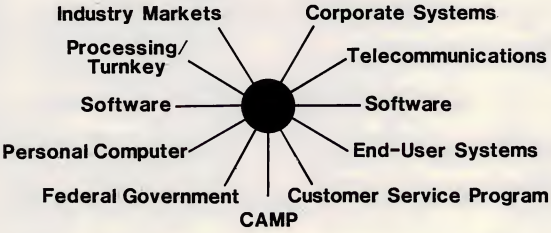
TEMPORARY OR PERMANENT CHANGES?

CONTENTS

INPUT RESEARCH SOURCES

- Subscription Programs
- Multiclient Projects
- Custom Consulting

INPUT SUBSCRIPTION PROGRAMS



RESEARCH BASE

- Vendor Interview/Analysis
  - All Over $10 Million
  - Thousands Under $10 Million
- Buyer Interview/Analysis
  - IS Manager Surveys
  - Specialized Surveys

RESEARCH BASE

- Use of CI Data
- Secondary Research

FORECAST PARAMETERS

- Current Dollars
- GNP - Steady Growth
- Inflation Assumptions:

  -1985: 3% -1986: 4%

  -1987: 5% -1988-1990: 6%

STATE OF THE INDUSTRY

ECONOMY

- Strong Dollar
- Slowing Industrial Base
- "Ripple" Effect
- Uncertainty

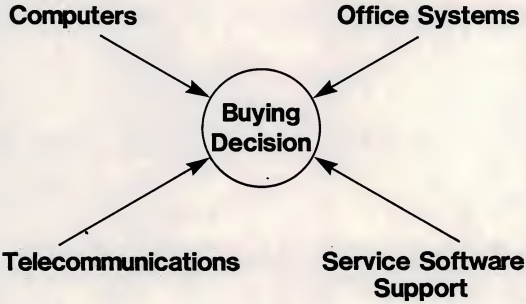
FUNDAMENTAL QUESTION OF BENEFIT FROM I.S. INVESTMENT

- Where's the productivity?

BUYING PROCESS CHANGING

- Involves
  - Users
  - IS Management
  - Finance
  - Corporate Management
- More Specialists

COMPLEXITY


Computers
Office Systems
Buying Decision
Telecommunications
Service Software Support

COMPLEXITY

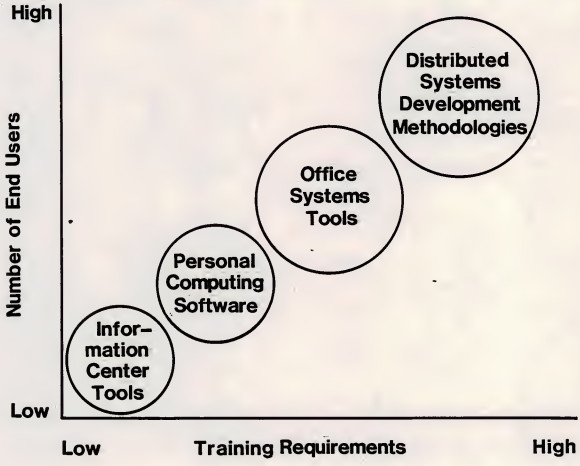
- Alternatives within Each Area
- Make versus Buy
  (In-House versus Service)
- Problem of Integration

LAW 1

Rate of Supply >

Rate of Absorption

THE GROWING TRAINING PROBLEM



LAW 2

Rate of Change <

Length of Decision Process

BUYING DECISION SLOWING DOWN

RESULTS

- Healthy
- Too Much Product
- Too Few Solutions
- Clogged Channels
- Lack of Support Infrastructure

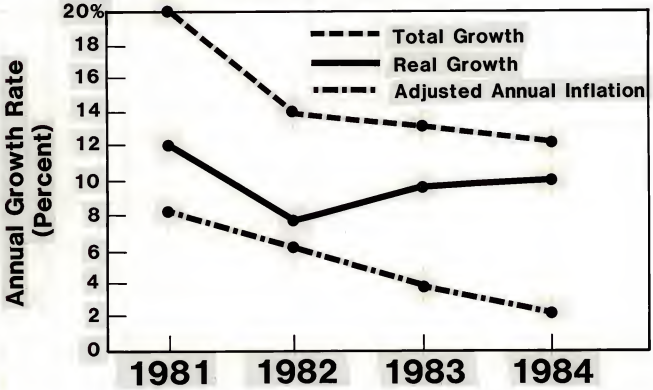
IMPLICATIONS FOR SERVICES

- Positive for Some Areas
  - Systems Integration
  - Facilities Management
  - Network Services
  - Turnkey Solutions
  - TPM
  - Education & Training
  - Consulting

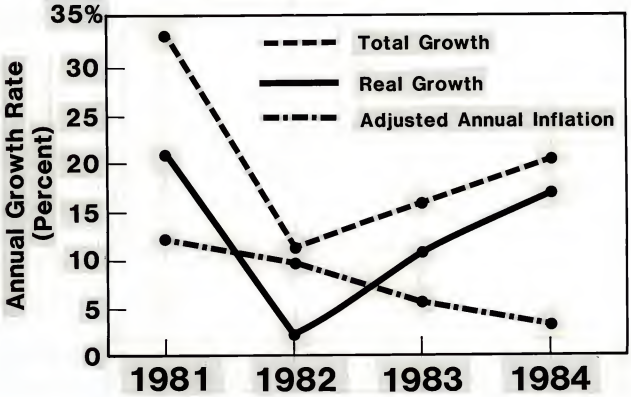
IMPLICATIONS FOR SERVICES

- Negative for Some Areas
  - Software Tied to "Box" Sales
  - Fragmented Product Lines
  - Obsolete Products

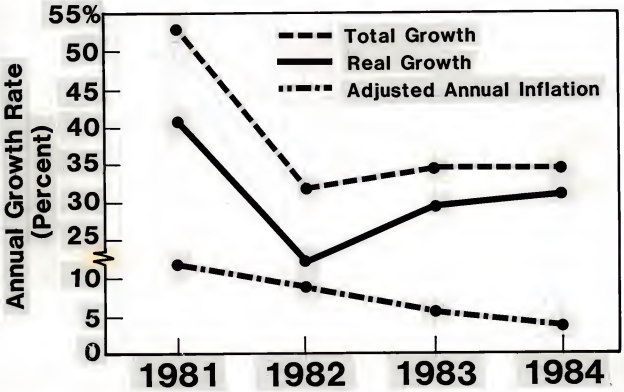
PROCESSING SERVICES GROWTH: 1981-1984



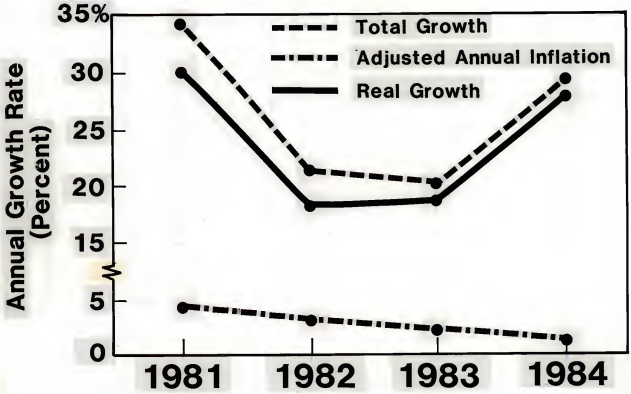
PROFESSIONAL SERVICES GROWTH: 1981-1984



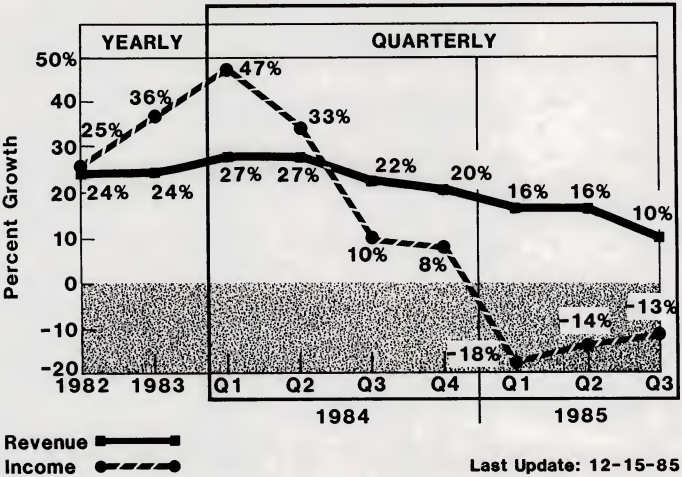
SOFTWARE PRODUCTS GROWTH: 1981-1984



TURNKEY SYSTEMS GROWTH: 1981-1984



PUBLIC INFORMATION SERVICES VENDORS



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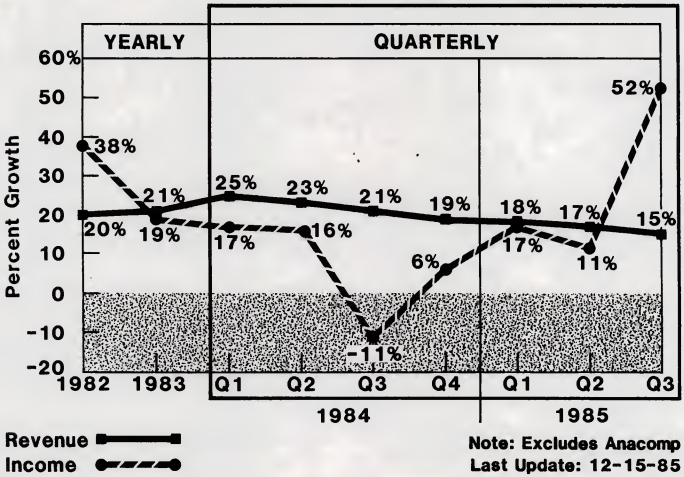
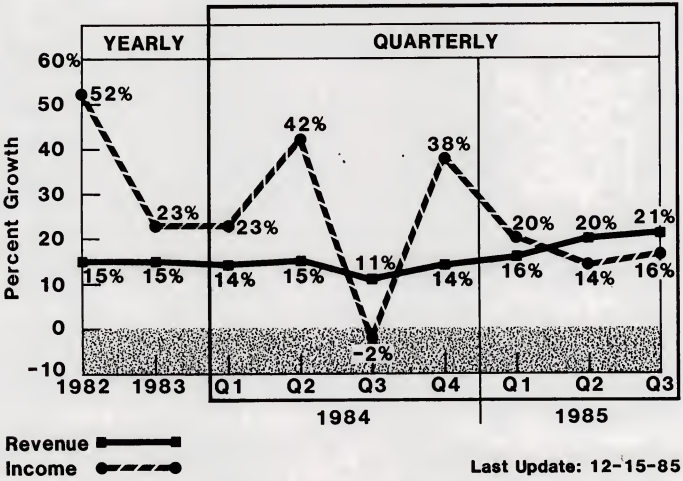
PUBLIC PROCESSING SERVICES VENDORS



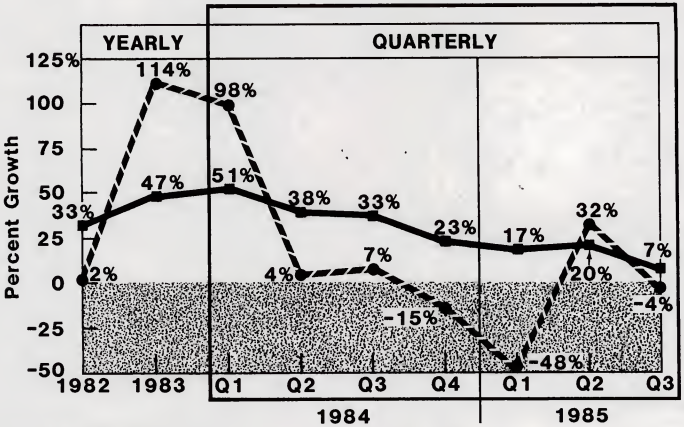
Note: Excludes Anacomp
Last Update: 12-15-85

PUBLIC PROFESSIONAL SERVICES VENDORS



Last Update: 12-15-85

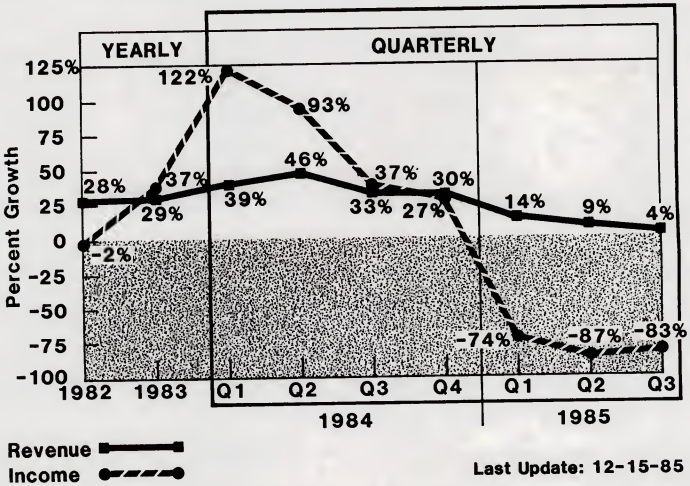
PUBLIC SOFTWARE PRODUCTS VENDORS



Revenue ■——■
Income ●- - -●

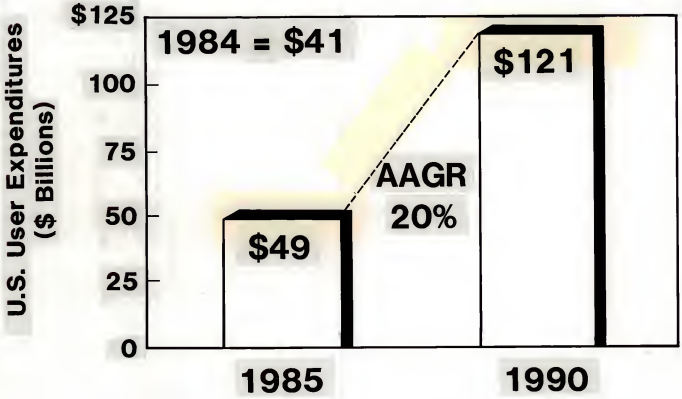
Last Update: 12-15-85

PUBLIC TURNKEY SYSTEMS VENDORS



Last Update: 12-15-85

TOTAL INFORMATION SERVICES



ENVIRONMENTAL CONSIDERATIONS

MYTHS CONTINUE TO EXPLODE

- Voice/Data Integration
- PC on Every Desk

"WAIT AND SEE" ATTITUDE PARTICULARLY RE IBM

MAJOR I.S. ISSUES

STRATEGIC
Cost Containment
Government Deregulation
Non-Traditional Competitors
Apply New Technology
Network Demands

MAJOR I.S. ISSUES

TACTICAL
Cost Containment
Information Delivery
Integrate IS and Corp. Planning
Customer Oriented Systems Architecture
Management Perception of IS

MAJOR I.S. ISSUES

OPERATIONAL
Improve Productivity
Contain Costs
Improve Information Delivery
Establish Customer Oriented Data Bases
Expand Use of New Technology

I.S.' ROLE IN CORPORATE PLANNING

Percent of Responses

CURRENT I.S. ENVIRONMENT

- Central Mainframes
- Terminals
- Micros
- Office Automation
- Info. Center

Single Data Center	Distributed Information Systems

FUTURE I.S. ENVIRONMENT

- Central Mainframes
- Distributed Minis and DBMS
- Intelligent Workstations
- M-M Links
- DSD
- Office Systems
- LANs

Single Data Center	Distributed Information Systems

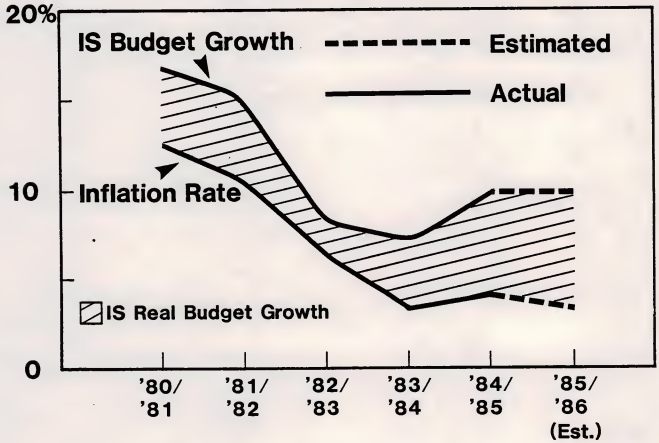
IMPACT OF TECHNOLOGY

	IMMEDIATE	NEAR TERM	LONG-TERM
Relational Data Bases	Low	Low	Low/ Medium
Voice/Data Integration	Low	Low	Medium/ High
LAN	Low	Low	Low

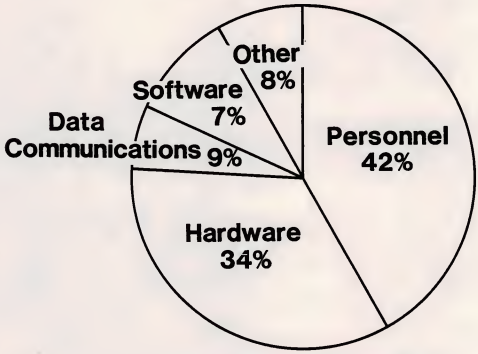
IMPACT OF TECHNOLOGY

	IMMEDIATE	NEAR TERM	LONG-TERM
End User Computing	High	Medium	Medium
Departmental Processing	Low	Low	High
Distributed Systems Development	Low	Medium	Medium

I.S. GROWTH VERSUS INFLATION



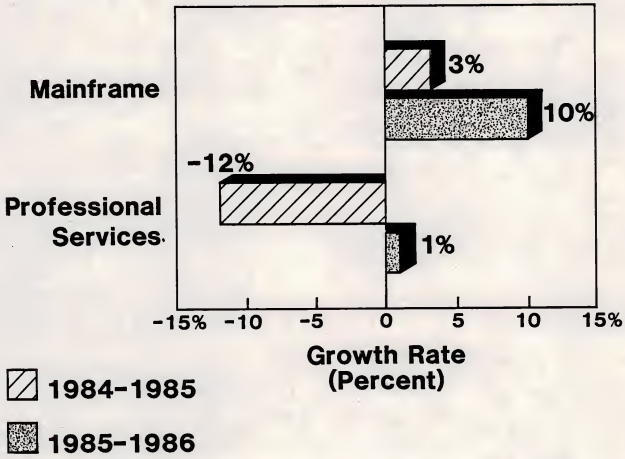
I.S. BUDGET DISTRIBUTION
1985



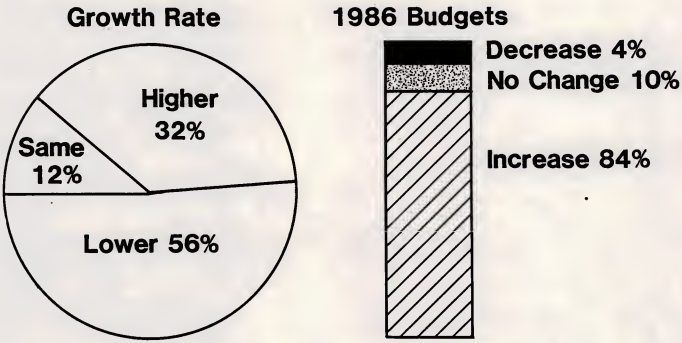
Percent of IS Budget

Budget Growth 1984-1985 - 10.0%
1985-1986 - 10.2%

LARGEST CHANGE IN BUDGET GROWTH



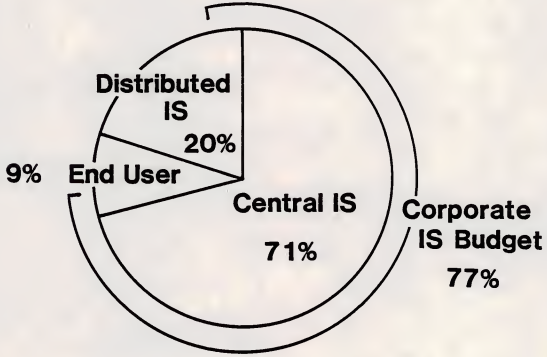
MOST BUDGETS WILL INCREASE BUT AT A LOWER RATE THAN IN 1985



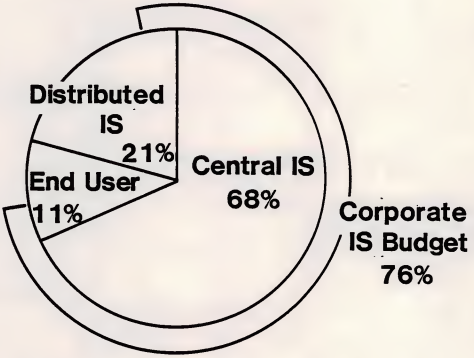
Percent of Responses

DISTRIBUTION OF I.S. EXPENSES

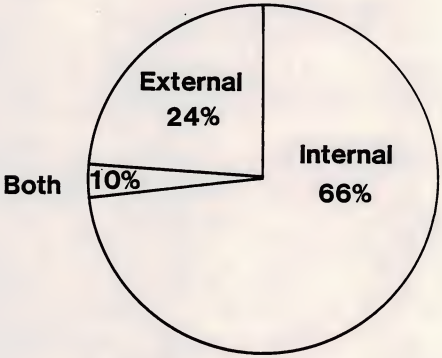
1985



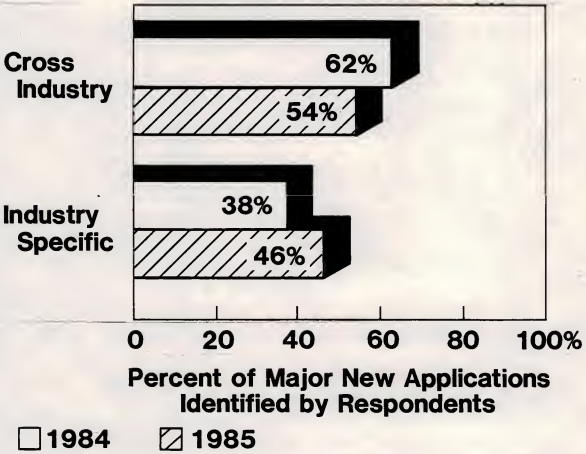
PROJECTED DISTRIBUTION OF I.S. EXPENSES
1986



NEW APPLICATION DEVELOPMENT SOURCES
1985



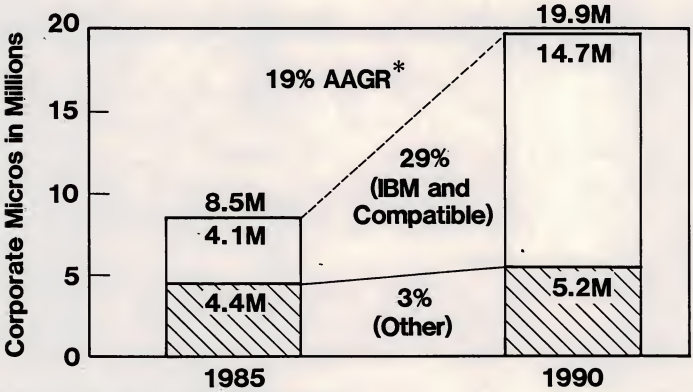
MAJOR APPLICATION DISTRIBUTION
(All Companies)



THE FUTURE OF END-USER COMPUTING

- Distributed Systems Development
- Micro-Mainframe Links
- Modeling, Analysis, Graphics, Reporting
- Applications Prototyping
- Expert Systems

CORPORATE MICRO GROWTH, 1985 - 1990



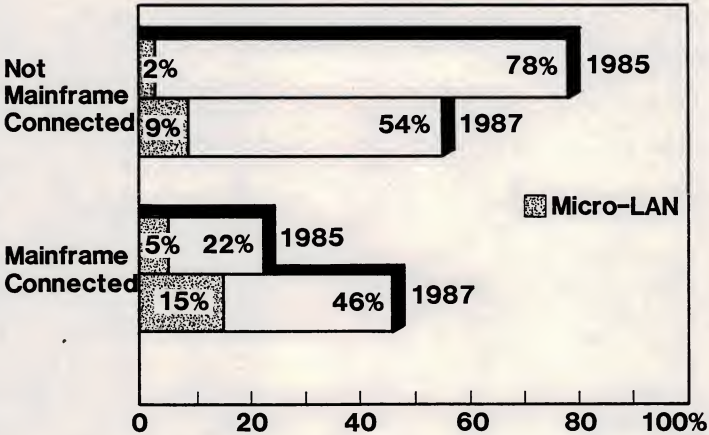
*Average Annual Growth Rate

MICRO-MARKET GROWTH

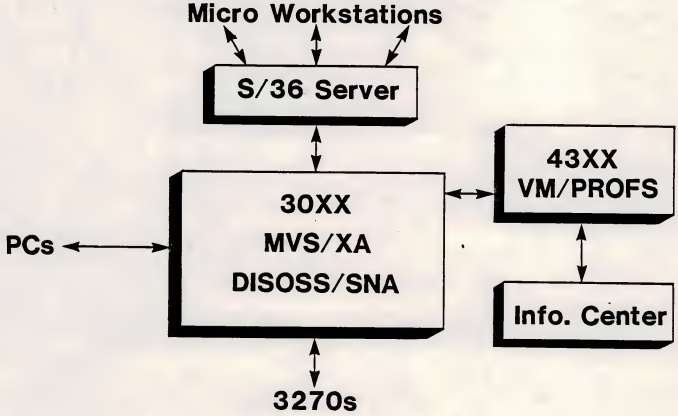
- Driven by Micro-Mainframe
  - Replacing Terminals
  - End-User Applications
  - "Virtual" Disk

Micro-Mainframe
vs.
Micro-LAN-Mainframe
vs.
Micro-Mini-Mainframe

MICRO-MAINFRAME CONNECTIVITY



IBM EMPHASIZES CENTRAL CONTROL



MICRO-MAINFRAME

- Requires Increased Capacity
  - Processing
  - Storage
  - Network

LACK OF CONNECTIVITY SUPPORT

- At PC/Workstation Level
- At System/36 to 30XX

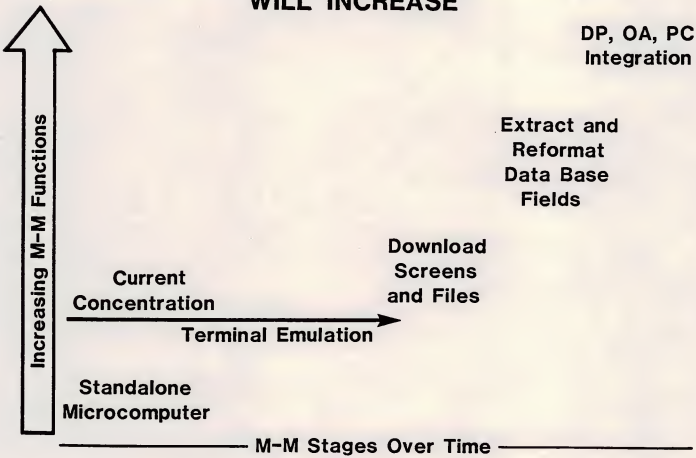
MICRO-MAINFRAME LINK MARKET

- State of Confusion Exists
  - No Standards
  - Wide Range of Function
  - Wide Range of Price
- No "Total Solution"
- Uncertainty

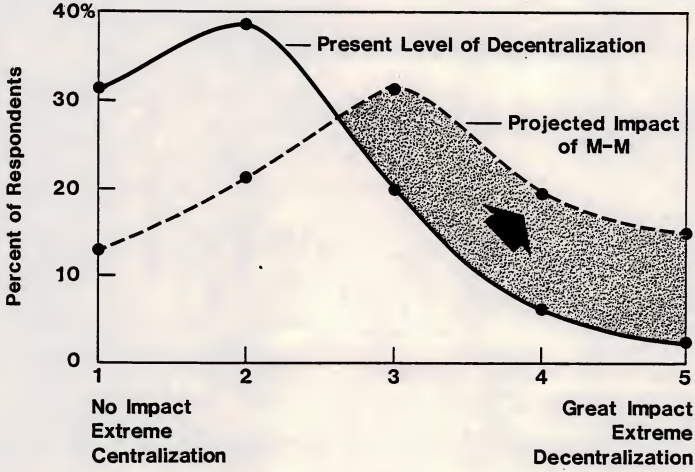
DDP WITH MICROS AS WORKSTATIONS

- Only in Designed Applications
- "Long's Drugs"
- "Nationwide Insurance"

DEMANDS FOR MICRO-MAINFRAME LINKS WILL INCREASE



M-M IS SHIFTING I.S. TOWARDS DECENTRALIZATION



MEDIA INTEGRATION

Base Type	Present	Future
Data Bases	Magnetic	Optical
Information Bases	Paper (Files) Micrographic	Optical Paper
Knowledge Bases	Humans Paper (Books & Files)	Humans Paper Optical

PROCESSING INTEGRATION

Processing Type	Present	Future
Data Base Processing	Mainframes	DBM, Mini/Micro
Information Base Processing	Human Interaction PC/WP, Graph.	Human Interaction Integrated Networks
Knowledge Base Processing	Human Interaction	Human Interaction Human-Computer Interaction

INPUT®

TELECOMMUNICATIONS IN TRANSITION

DEREGULATION AND WHAT IT HAS DONE

- Confused the User
- Opened Up the Marketplace
- Increased Phone Costs
- Decreased Services and Service Levels

DEREGULATION AND WHAT IT HAS DONE

- Increased Competition
- Forced Companies to Adopt Bypass
- Pushed the Technology into New Areas, e.g., Satellite, Fiber
- Confused the User!

TELECOMMUNICATIONS

Corporate network as much a myth as the corporate data base.

TELECOMMUNICATIONS

Voice and data are not being integrated.

I.S. FOR COMPETITIVE ADVANTAGE

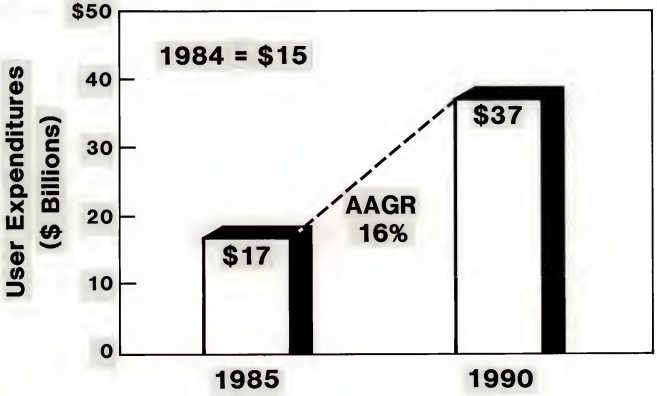
COMPETITIVE ADVANTAGES OF INFORMATION TECHNOLOGY

- Effective Decision Support
- Improved Customer Service
- Reduced Operating Costs
- Effective Sales/Marketing
- Improved Time Management
- Rapid Response to Change

MARKET FORECASTS

PROCESSING/NETWORK SERVICES - GROWTH ACCELERATING

PROCESSING/NETWORK SERVICES MARKET



CHANGES FROM 1984 PROCESSING SERVICES

- Change in Growth Rate 1983/1984
  - 1984: 12%
  - 1985: 16%
- Change in Growth Rate 1984/1985
  - 1984: 14%
  - 1985: 14%

CHANGES FROM 1984 PROCESSING SERVICES

- Name Change
  - "Processing" to "Processing/ Network" Services

AK

CHANGES FROM 1984 PROCESSING SERVICES

- Growth Rate 1984/1989 versus 1985/1990
  - 1984: 13%
  - 1985: 16%

Processing Services Success
Automatic Data Processing – The First $1 Billion Independent Information Services Company!

ADP - SERVICE COMPANY

- Continuing Revenue
- Mainline Applications
  - Payroll
  - Financial Services
  - Distribution
- Focused and Firm

INFORMATION DISTRIBUTION

- Data Bases
- EDI/EII

PROCESSING SERVICES
INFORMATION BASED SERVICES

- Companies Growing Steadily

  20-30% Range Typical

- Growth Has Slowed in 1985

PROCESSING SERVICES
INFORMATION BASED SERVICES

- Expect Continued Media Transfer
  - Paper to Electronic
  - Paper/Electronic to Optical
- Additive Rather than Replacement

PROCESSING SERVICES
INFORMATION BASED SERVICES

Notable Failures

- Medical Data Bases
- Passive Data Bases

PROCESSING SERVICES
INFORMATION BASED SERVICES

Notable Successes

- Quotron versus IBM/ML
- Telerate
- D & B

EDI/EII

- Inter/Intra Industry Information Services
- International Scope
- "Consolidation" is Intra-Company EDI
- "Electronic Mail" is EII

EDI/EII

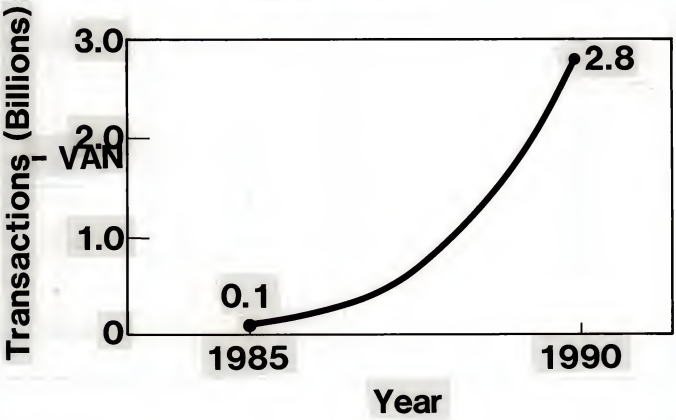
- Service Market
- Most Developed Markets
  - Banking (ATM Switches)
  - Banking/Retail (POS Networks)
- In-House Software Solutions

EDI

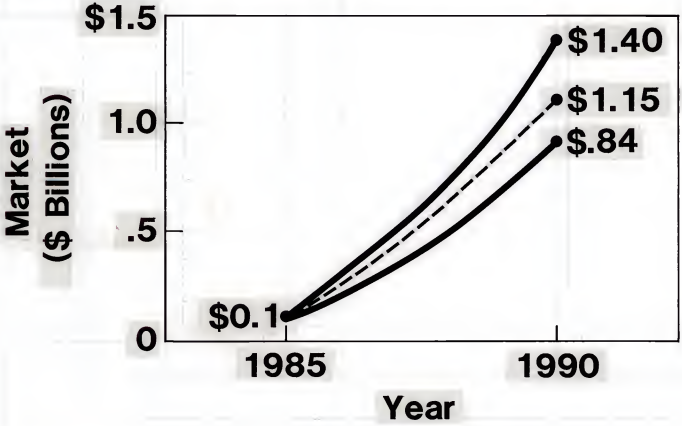
- Explosive Growth in Services

  - Network/Processing

EDI MARKET



EDI MARKET GROWTH



FACILITIES MANAGEMENT

- SI Moving to FM
- Expanding Scope

NETWORK SERVICES

- VANS
- Voice Services

BASIC APPLICATIONS GROWTH METHODS

- User Site Hardware Services
- "Turnkey System" → "Service"

INDUSTRY-SPECIFIC SERVICES

- Finance and Banking
- Health/Medical
- Distribution/Trade

RESOURCE/UTILITY SERVICES

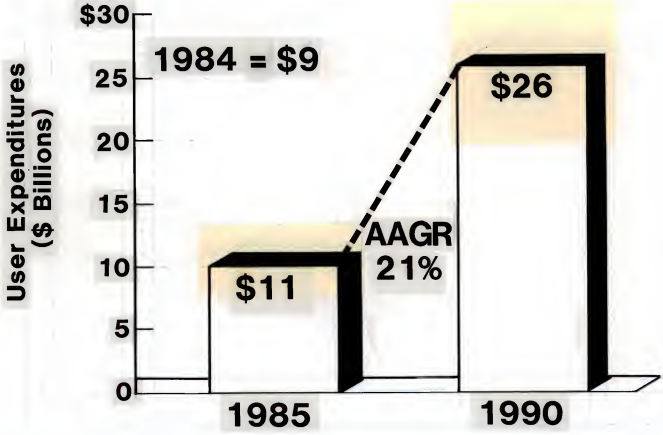
- VANs
- COM
- Laser Printing
- Data Entry
- Large-Scale Processing/Networks

"TIMESHARING" STILL AROUND MOST SHRINKAGE GONE

DIRECTION

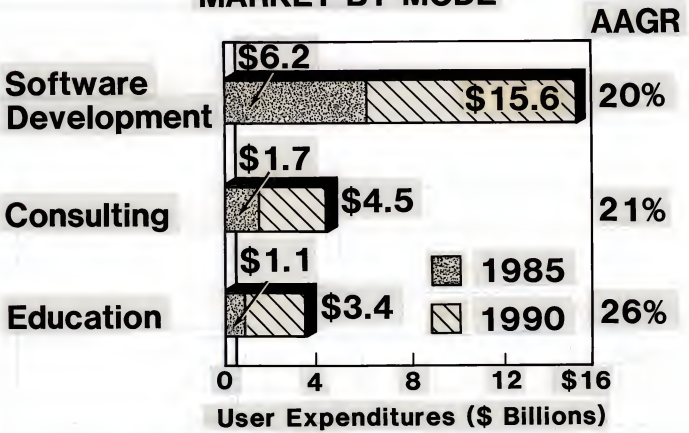
Single Site		Multi-Site
Simple	→	Complex
General		Specific

PROFESSIONAL SERVICES MARKET



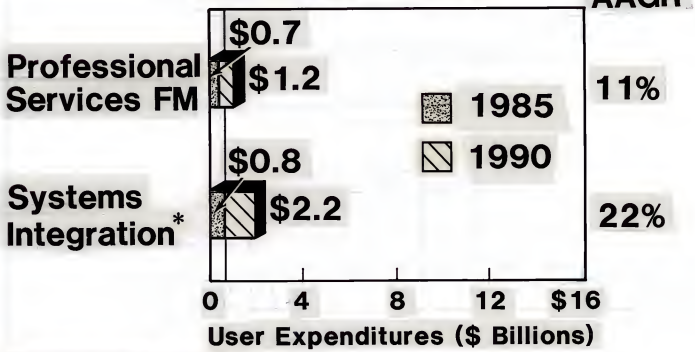
72MAP5R

PROFESSIONAL SERVICES MARKET BY MODE



73MAP5R

PROFESSIONAL SERVICES MARKET BY MODE

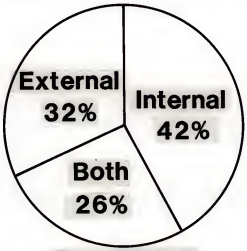


*Federal Government

CHANGES FROM 1984
PROFESSIONAL SERVICES

- Minor Changes
- Potential Understatement of the Market Growth
- Reasons
  - Price Increases from Specialization
  - Commercial Systems Integration

BANKING AND FINANCE
SOURCE OF DEVELOPMENT - 1985



Percent of Responses

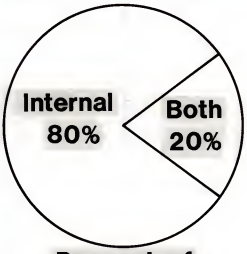
Cost Range

$15K - $4.5M

BANKING AND FINANCE MOST IMPORTANT NEW APPLICATIONS - 1985

- DDA
- Loan Applications
- Data Base Management and Query
- ATM/POS
- Customer Information

PROCESS MANUFACTURING SOURCE OF DEVELOPMENT - 1985



Percent of Responses

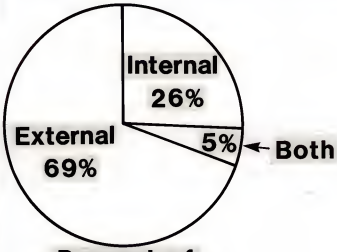
Cost Range

$1.5K - $2M

PROCESS MANUFACTURING MOST IMPORTANT NEW APPLICATIONS - 1985

- Finance and Accounting
- Process Control
- Inventory
- Office Systems
- Materials Management

TRANSPORTATION
SOURCE OF DEVELOPMENT - 1985



Percent of Responses

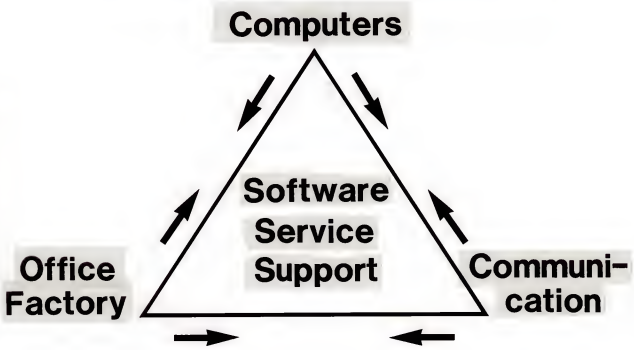
Cost Range

$25K - $120K

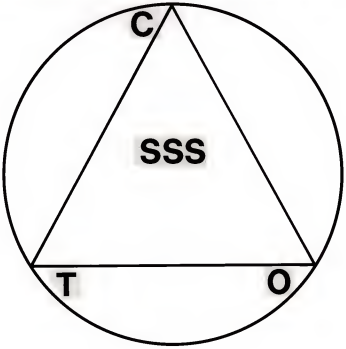
TRANSPORTATION MOST IMPORTANT NEW APPLICATIONS - 1985

- Finance
- Office Systems
- Systems Software
- Human Resources
- Truck Licensing

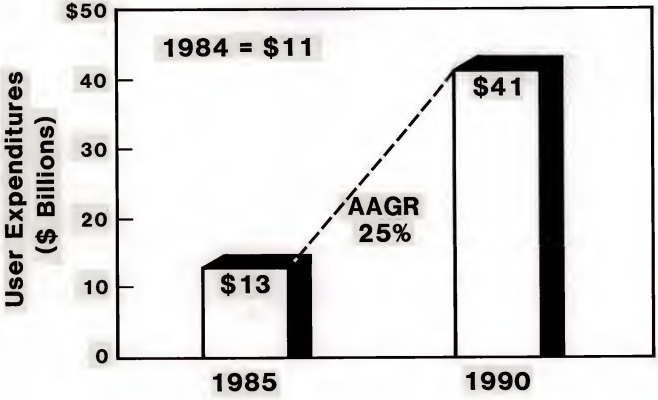
PROBLEM - COMPLEXITY



OPPORTUNITY - INTEGRATION



SOFTWARE PRODUCTS MARKET



CHANGES FROM 1984 SOFTWARE PRODUCTS

- Growth Rate 1984/1985 Reduced
  - 1984: 33%
  - 1985: 20%

CHANGES FROM 1984 SOFTWARE PRODUCTS

- Reasons
  1. Industry Slowdown
  2. Product Problems
  3. Lower Inflation
  4. Heavy Micro Impact

CHANGES FROM 1984 SOFTWARE PRODUCTS

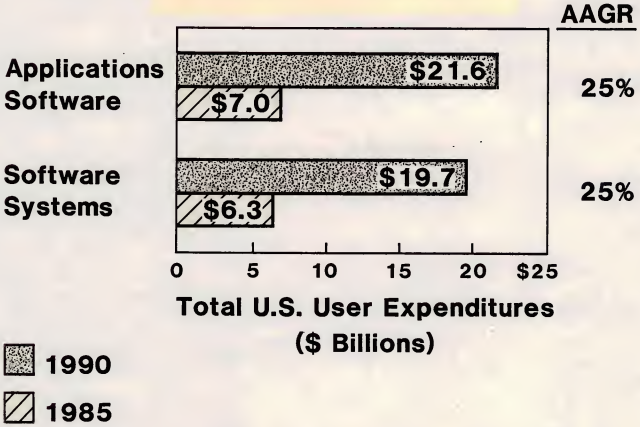
- Growth Rate 1984/1989 versus 1985/1990
  - 1984: 31%
  - 1985: 25%

CHANGES FROM 1984 SOFTWARE PRODUCTS

Reasons

1. Sheer Size of Market in 1989/1990
2. Acceleration of Drive to Recurring Revenue
3. Implementation Bottleneck
4. Reduced Inflation

SOFTWARE PRODUCTS MARKETS



POSITIVE FORCES

- Hardware Base Increase
- "Competitive Edge" Recognition
- Standardization
- New Markets

NEGATIVE FORCES

- Absorption Bottleneck
- System Failures - Credibility
- Micro-Mainframe Confusion

CHANGES FROM 1984 SOFTWARE PRODUCTS

- Applications Software 1984/1985 Growth
  - 1984: 34%
  - 1985: 21%

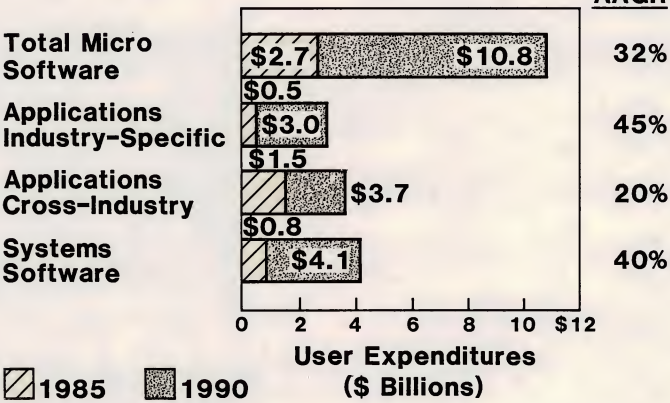
CHANGES FROM 1984 SOFTWARE PRODUCTS

- Systems Software 1984/1985 Growth
  - 1984: 31%
  - 1985: 19%

CHANGES FROM 1984 SOFTWARE PRODUCTS

- Systems Software 1984/1989 versus 1985/1990
  - 1984: 29%
  - 1985: 25%
- Applications Software 1984/1989 versus 1985/1990
  - 1984: 31%
  - 1985: 25%

STRONG MICRO SOFTWARE MARKET 1985-1990



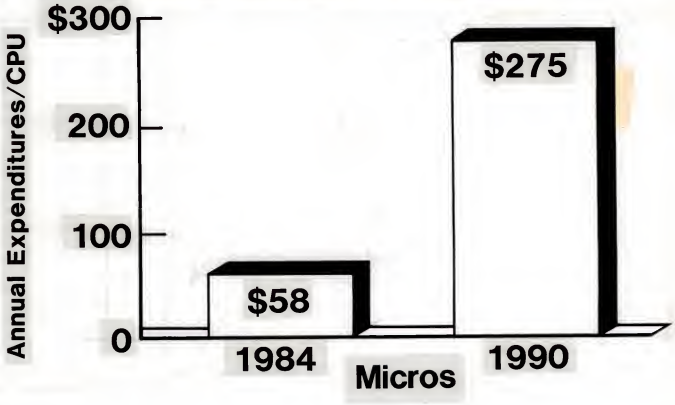
CHANGES FROM 1984 MICRO SOFTWARE PRODUCTS

- Cross-Industry Applications Growth 1984/1989 versus 1985/1990
  - 1984: 41%
  - 1985: 20%

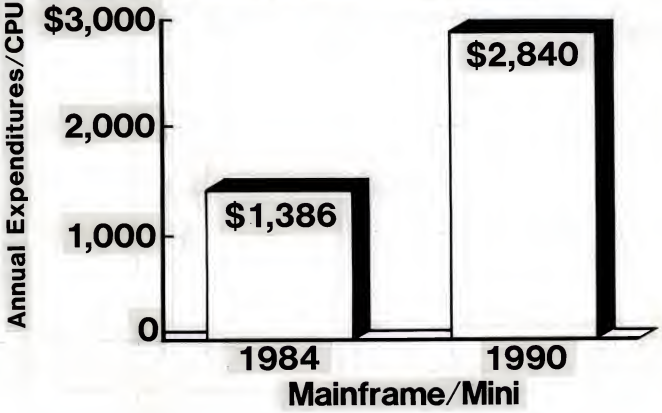
CHANGES FROM 1984 MICRO SOFTWARE PRODUCTS

- Reasons
  - Reduction in Installed Base Forecasts
  - Pricing Impacts
    - "Commodity" Pricing
    - Site Licensing

APPLICATION DEVELOPMENT TOOLS PENETRATION ANALYSIS



APPLICATION DEVELOPMENT TOOLS PENETRATION ANALYSIS



VICIOUS CYCLE

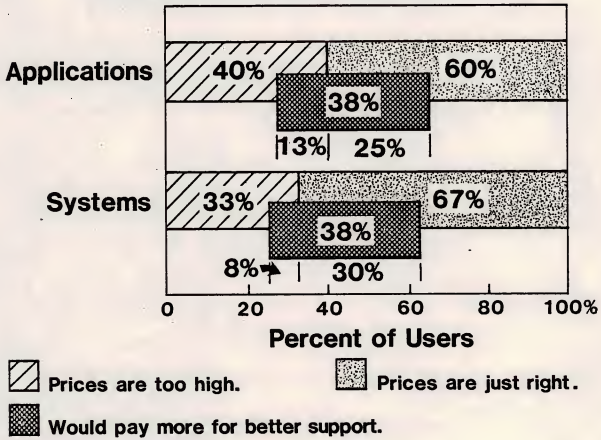
SOFTWARE PRODUCTS TRENDS

- Purchasing Changes
  - Centralized
  - Task-Team

SOFTWARE PRODUCTS TRENDS

- Pricing Changes
  - Methods
  - Amounts

USER ATTITUDES TO PRICING



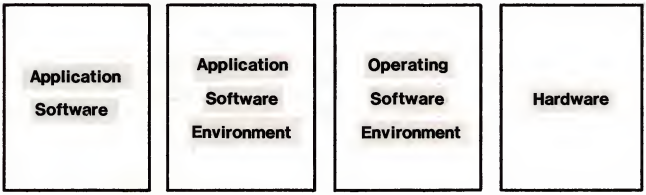
MARKET STRUCTURE - 1990

- 20% Maintenance Revenues
- 40% Lease (Month-to-Month)
- 40% New Procurements

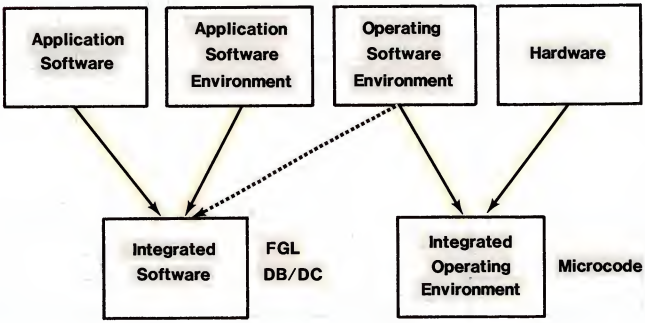
NEW PROCUREMENTS - 1990

- 80% Month-to-Month Payment Systems
- 20% Front-End Payment

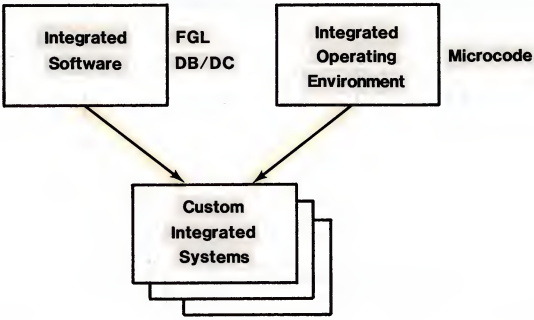
HARDWARE/SOFTWARE RELATIONSHIPS BEFORE 1985



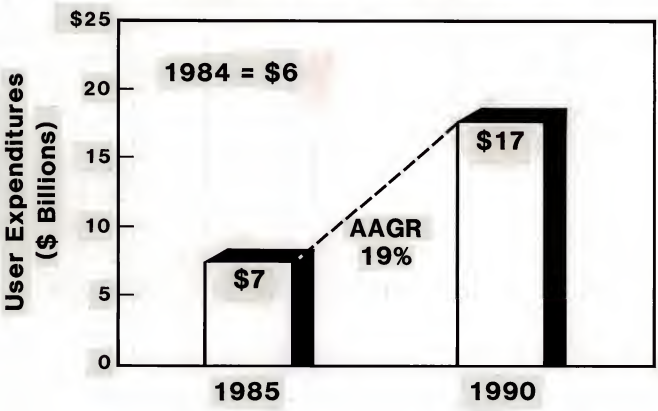
HARDWARE/SOFTWARE RELATIONSHIPS 1985-1995



HARDWARE/SOFTWARE RELATIONSHIPS AFTER 1995



TURNKEY SYSTEMS MARKET



CHANGES FROM 1984 TURNKEY SYSTEMS

- Change in Growth 1984/1985
  - 1984: 33%
  - 1985: 14%
- Reasons
  - CAD/CAM Changes
  - Capital Spending Slowdown
  - Price Pressures

CHANGES FROM 1984 TURNKEY SYSTEMS

- Change in Growth: 1984/1989 vs. 1985/1990
  - 1984: 27%
  - 1985: 19%

CHANGES FROM 1984 TURNKEY SYSTEMS

- Reasons
  - Inflation Slowdown
  - Multi-Year Impact 1985 Problems
  - Price/Performance Pressures
  - Recurring Revenue Drive Accelerating

TURNKEY SYSTEMS PROJECTIONS

- Validity of the VAR Approach

?

- Viability of the Vendors

TURNKEY SYSTEMS PROJECTIONS

- Standard Hardware (VAR)
  - Faster Growth Now
- Custom Hardware (Integrated Systems)
  - Eventual Growth Faster
  - "Lock-ins"

TURNKEY SYSTEMS PROJECTIONS

- Cross-Industry Being Driven to Industry Specific
- New Functional Areas
  - Marketing
  - Project Management

CONCLUSIONS

HIGH LEVEL STRATEGIC TRENDS

- IS as a Profit Center
- Managing IS through High Level Steering Committee
- IS Moving Up in Visibility
- Marketing IS Services

LIMITS TO GROWTH

- Absorption Rate
  - Implementation
  - Education and Training
  - Organization Changes
  - Resistance to Change
  - Logistics

"RICH GETTING RICHER - POOR GETTING POORER"

GEARING

- What Growth Are You Geared for?
- What Happens if Growth is:

  a. Higher?

  b. Lower?

RAPID DECELERATION

- Need "Seatbelts"
- Advantage of Continuous Revenue Stream

Software is not
<u>the</u> Solution.

Software is Part of the Solution.

RECOMMENDATIONS

- Codify Buying/Sales Process
  - Vendor
  - Buyer

RECOMMENDATIONS

- Give Pricing a More Central Role
- Review Pricing More Frequently
- Develop a Supporting Financial Strategy
- Set Discounts Based on Long-Term Business Objective

RECOMMENDATIONS

- Improve Absorption Rate
- Sell Service/Solutions

RECOMMENDATIONS

- Plan for Volatility
- Track Competition Agressively

RECOMMENDATIONS PLAN

RECOMMENDATIONS

- Consider Price Increases
  - Products
  - Support
- Consider Price Decreases
  - Delivery Vehicle
  - Entry Point
- Firmly Enforce Pricing Policies

Copies of final "8" for MAPS
originals @ printer
due 11-13

TEMPORARY OR PERMANENT CHANGES?

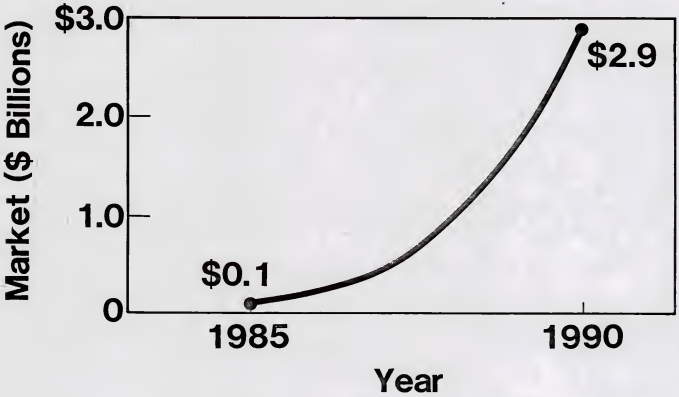
RESEARCH BASE

- Use of CI Data
- Secondary Research

RESEARCH BASE

- Vendor Interview/Analysis
  - All Over $10 Million
  - Thousands Under $10 Million
- Buyer Interview/Analysis
  - IS Manager Surveys
  - Specialized Surveys

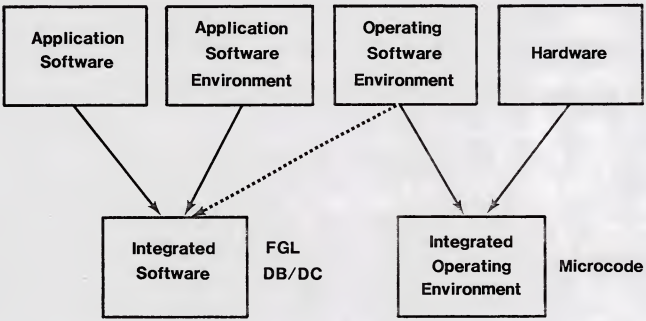
EDI MARKET



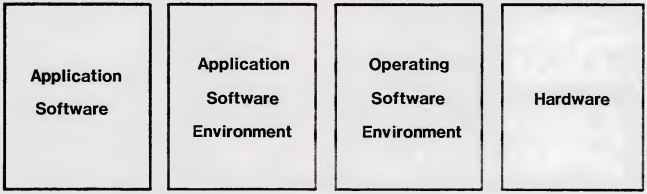
EDI

- Explosive Growth in Services
  - VAN
  - Network/Processing

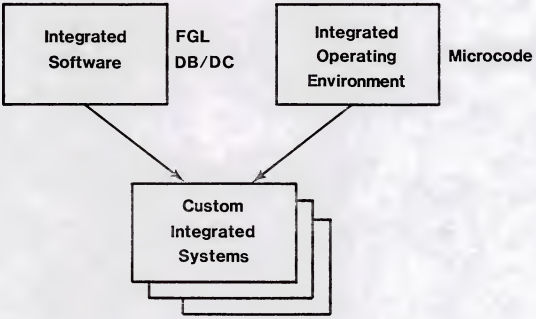
HARDWARE/SOFTWARE RELATIONSHIPS 1985-1995



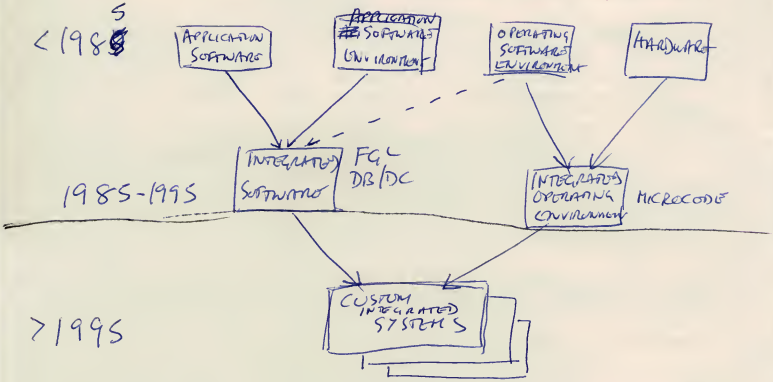
HARDWARE/SOFTWARE RELATIONSHIPS BEFORE 1985



HARDWARE/SOFTWARE RELATIONSHIPS AFTER 1995



HARDWARE / SOFTWARE RELATIONSHIPS.



RECOMMENDATIONS

- CODIFY BUYING PROCESS
  - VENDOR
  - BUYER.

BARRIERS TO GROWTH

131/132/133

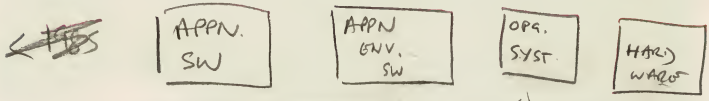
- ABSORBTION RATE.
  - IMPLEMENTATION
  - EDUCATION & TRAINING
  - ORGANIZATIONAL ISSUES
  - RESISTANCE TO CHANGE
  - LOGISTICS ISSUES

See over make into 3 charts

Hardware/SOFTWARE RELATIONSHIPS

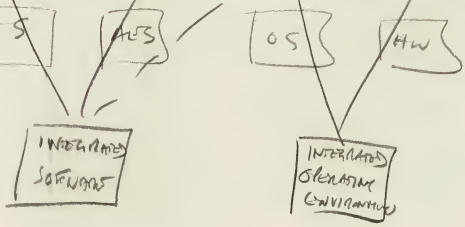
1 chart

title-Before 1985

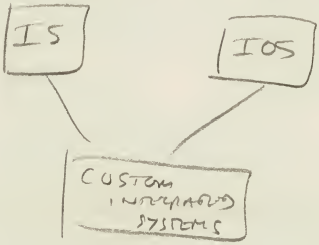


1 chart

title-1985-1995



title-AFTER1995



- Software product vendors apparently set higher profit margins through a combination of methods shown in Exhibit V-7. The three most important methods they used are increasing training offerings, unbundling, and leveraging their skills across product services.

- The professional services vendors are trying a variety of methods including raising rates and offering higher skill levels at correspondingly higher rates that are likely to meet user resistance.

- Neither professional services vendors or software product vendors believe that professional services have a significant effect on software product profit margins, as shown in Exhibit V-8.

- Many software product vendors surveyed indicated that some level of professional services was needed to promote and support software product sales. Increased demand for training, implementation, and on-site support requires that vendors provide professional services support either directly or through partnering arrangements.

- INPUT believes that market specialization has a greater impact on software product margins than does the offering of professional services. Data taken from INPUT's Information Services Vendor Financial Watch and presented in Exhibit V-9 shows that for publicly held companies the net profit margins are about 50% higher for specialized professional services vendors and software product vendors than for their diversified counterparts.

- INPUT concludes that offering professional services has little negative effect on software product margins and could well be complementary, if carefully managed.

EDI MARKET

~~EXHIBIT V-7~~

How to ~~METHODS FOR~~ INCREAS~~ING~~E PROFIT MARGINS ~~OF PROFESSIONAL SERVICES~~

METHODS	PERCENT OF RESPONDENTS	
	~~PROFESSIONAL SERVICES~~ VENDORS* Response	SOFTWARE PRODUCT VENDORS†
Leverage Skills across Services	21%	40%
Become More Cost Conscious	43	-
Slowly Raise Rates	29	-
Increase Training Services	36	60
Offer Higher Skill Levels	57	20
Specialization	36	-
Unbundling	29	50

*Sample Size = 14.
†Sample Size = 10.

EDI

- EXPLOSIVE GROWTH. IN SERVICES
  - VAN
  - NETWORK / PROCESSING.

RESEARCH BASE

- ~~ANALYSIS OF~~ VENDORS INTERVIEW/ANALYSIS
  - ALL OVER $10 MILLION
  - ~~ALSO~~ THOUSANDS UNDER $10 MILLION

- ~~ANALYSIS OF~~ BUYERS INTERVIEW/ANALYSIS.
  - IS MANAGER SURVEYS
  - SPECIALIZED SURVEYS.

~~USE OF CI DATA.~~

7

RESEARCH BASE

- USE OF CI DATA.

- SECONDARY RESEARCH.

8

TEMPORARY

OR

PERMANENT CHANGES?

P

3

MAPS

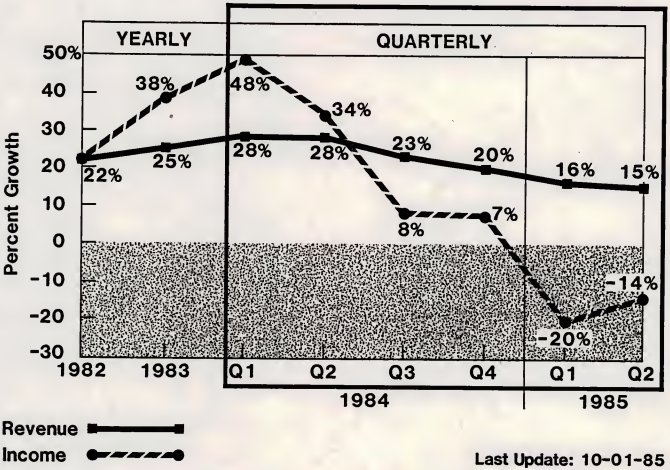
131
132
133
88
89
78
3

Peters
new
charts
Received
Fri Nov 1

Send to him
after finish
Wako

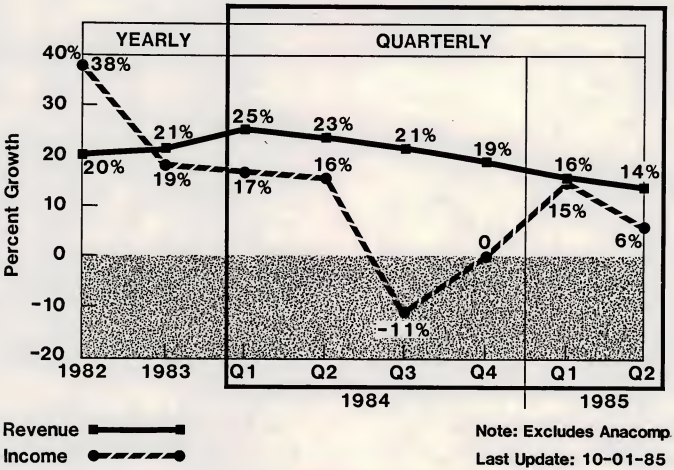
3

PUBLIC INFORMATION SERVICES VENDORS



Last Update: 10-01-85

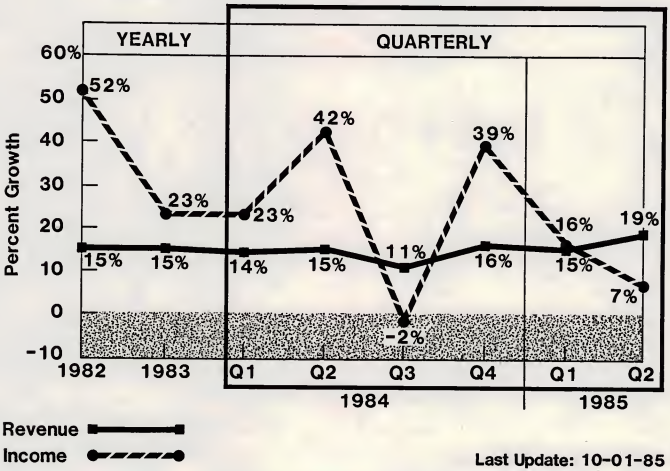
PUBLIC PROCESSING SERVICES VENDORS



Note: Excludes Anacomp.

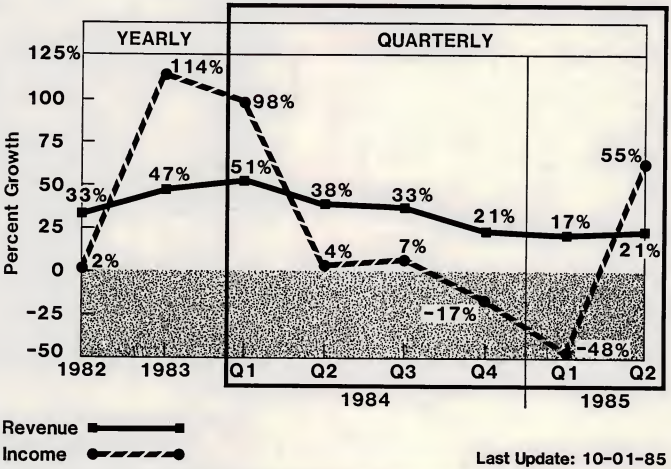
Last Update: 10-01-85

PUBLIC PROFESSIONAL SERVICES VENDORS



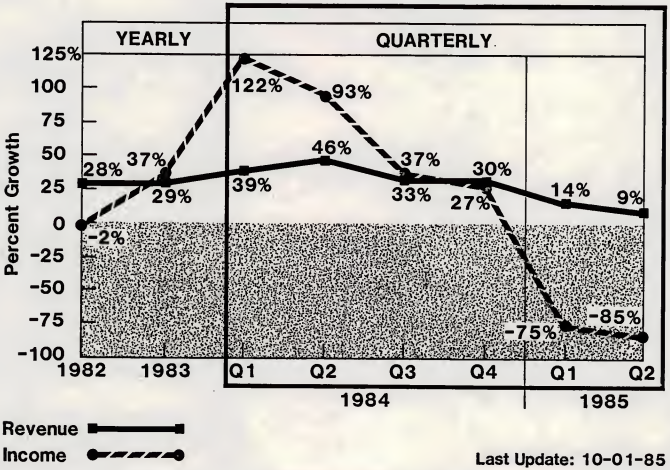
Last Update: 10-01-85

PUBLIC SOFTWARE PRODUCTS VENDORS



Last Update: 10-01-85

PUBLIC TURNKEY SYSTEMS VENDORS



Last Update: 10-01-85